REMARKS

Claims 1-16 are pending. Claims 1-16 are cancelled and claims 17-27 are added herein. Accordingly, claims 17-27 are at issue.

Both the drawings and the specification stand objected to with respect to the use of reference character 15. The specification is amended so that the intermediate pipe piece is referred to by reference character 25 while the protrusion is designated with the reference character 15 to be consistent with the drawings. Accordingly, the objections to the drawings and specification on this basis is believed to be obviated.

Headings have been added at appropriate locations in the specification to obviate the objection to the specification on this basis.

The added claims refer to the catalyst body having a honeycomb metal matrix to obviate the objections to the claims.

Claims 2 and 10 stand rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claims 2 and 10 are cancelled herein to obviate the indefiniteness rejection with respect thereto.

Claims 1-5, 7-11 and 16 stand rejected under 35 U.S.C. §102(e) as anticipated by Foster et al. Claims 12-15 stand rejected under 35 U.S.C. §103(a) as unpatenable over Foster et al. in view of Maus et al. Claims 1-5, 8, and 11 stand rejected under 35 U.S.C. §103(a) as unpatentable over Santiago et al. in view of Foster et al. Claim 6 stands rejected under 35 U.S.C. §103(a) as unpatentable over Santiago et al. in view of Foster et al. as applied to claims 1-5, 8 and 11, and further in view of Usleman et al.

The rejections, as they may apply to the claims presented herein, are respectfully traversed.

New independent claim 17 is based on a combination of previous claims 1, 3, 5 and 6. Accordingly, claim 17 requires the catalyst body be spaced from an inner pipe to form a gas space with the gas space being closed at its downstream end, whereas its upstream end is in communication with exhaust gas flow. It is believed that the combination of Santiago et al. and Foster et al. in view of Usleman et al. does not suggest the arrangement of claim 17.

More particularly, Santiago et al. disclose an inner housing 73 that is spaced from the catalyst body jacket 66 with elastically deformable, damping rings 67 and 68 held therebetween. There is also an outer housing 72 spaced from the inner housing 73 with damping end rings 69 and 70 therebetween. Accordingly, the catalyst body 65 is not fixedly connected to either the inner housing or outer housing at any point unlike the fixedly connected catalyst body and housing recited in claim 17. Further, Santiago et al. teach that these rings are of a fibrous material, and thus would not act to close off the space between the housings from exhaust gas flow, as required at the downstream end of the gas space of claim 17. Alternatively, Santiago et al. also disclose prepressing the rings to form a gas-tight seal (Col. 3, lines 11-17). In this instance, Santiago et al. fail to teach the gas space in communication with exhaust gas flow, as recited in claim 17.

Foster et al. disclose phase change material 14 located in the space between the outer phase change container 16 and the inner housing 12 for the catalytic substrate 10. At both the inlet and outlet ends, this phase change material space is closed. In fact, Foster et al. teach forming weld joints at the end edges 32 so that the phase change container can hold a vacuum (column 3, lines 25-29). Accordingly, unlike the open ended gas space of claim 17 which is filled with hot gas from the engine to ensure that the catalyst body as well as the inner pipe are quickly heated to reduce temperature differences therebetween for reduced stress, Foster et al. specifically teach away from this claimed arrangement as they contemplate avoiding exhaust gas within the phase change material space since the intent of Foster et al. is to be able to maintain vacuum conditions therein.

Turning next to Usleman et al., the exhaust processor 10 does not include a gas space between an inner pipe and catalyst body closed at its downstream end and which communicates at its upstream end with the exhaust gas flow. As can be seen in FIG. 2, the inner shell 24 corresponding to the inner pipe of claim 17 and the catalyst body 22 are radially spaced with the space being open at both axial ends. There is a space between the inner shell 24 and the outer shell 36. However, this air gap 38 is closed by being welded together at the inlet 16 or upstream end, while the downstream end is only closed by a seal ring 50 of an

insulating material (column 7, lines 15-23). This is exactly contrary to the arrangement recited in claim 17 with the gas space communicating with exhaust gas flow at its upstream end and being closed at its downstream end. Accordingly, it is believed that very little if any exhaust gas flow would occur in space 38. In fact, Usleman et al. teach filling of their gap 38 with insulating material 52. In this regard, Usleman et al. teach away from providing the shell 24 with the advantage of heating up very quickly similar to the inner pipe of claim 17. Accordingly, for the above reasons, it is believed that claim 17, and claims 18-27 which depend cognately therefrom, are allowable over the relied upon art.

Based on the foregoing, consideration and allowance of claims 17-27 are respectfully requested.

Respectfully submitted,

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